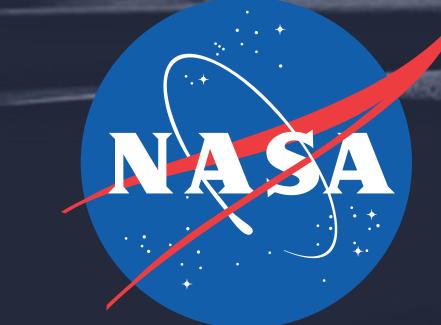
PDS LUNAR DATA NODE RESTORATION OF APOLLO IN-SITU SURFACE DATA

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Between 1969 and 1972, Apollos 12, 14, 15, 16, and 17 each set up an Apollo Lunar Surface Experiments Package (ALSEP). Each ALSEP package contained a different suite of instruments which took measurements and transmitted the results back to Earth over periods from 5 to 7 years until they were turned off on 30 September 1977. To this day the ALSEP data remain the only long-term in-situ information on the Moon's surface environment. The Lunar Data Node has been formed at the National Space Science Data Center (NSSDC) under the auspices of the Planetary Data System (PDS) Geosciences Node to put relevant, scientifically important ALSEP and other Apollo data into accessible digital form for use by researchers and mission planners. Because some of the Apollo data were never archived at NSSDC, we are also trying to locate and recover these data. The figures show the data sets being restored at present, status of the restorations, and future plans.

Apollo Surface Experiment Packages

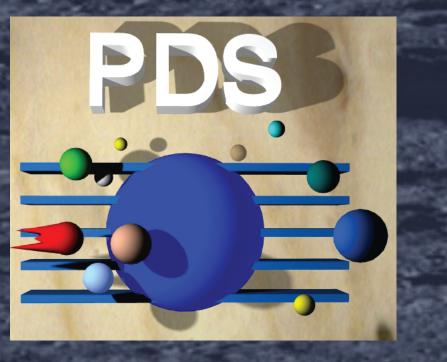
Apollo 11 EASEP 7/21/69 - 8/27/69 Apollo 12 ALSEP 11/19/69 - 9/30/77 Apollo 14 ALSEP 2/5/71 - 9/30/77 Apollo 15 ALSEP 7/31/71 - 9/30/77 Apollo 16 ALSEP 4/21/72 - 9/30/77 Apollo 17 ALSEP 12/12/72 - 9/30/77

Packages

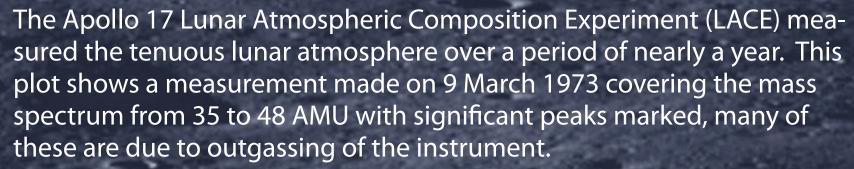
Lunar Data Node Team Howard Leckner Michael Liu **Ronald Buck Allison Lopez Pam Clark** Jay Friedlander **Paul Lowman** Stephanie McLaughlin **James Garvin** Ed Grayzeck Katie Pazamickas **Jeff Plescia Patrick Taylor** H. Kent Hills **David Williams Danny Hoag**

http://nssdc.gsfc.nasa.gov/planetary/lunar/lunar_data/



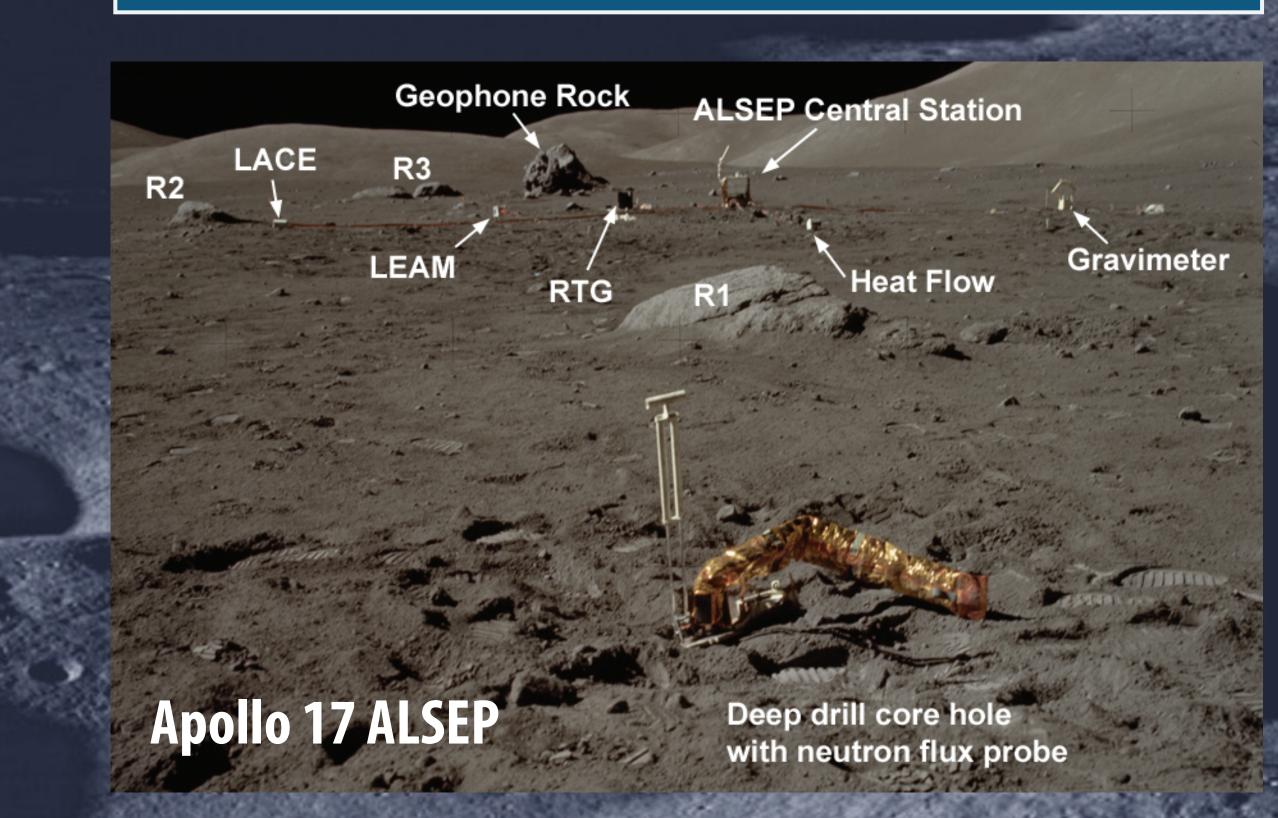


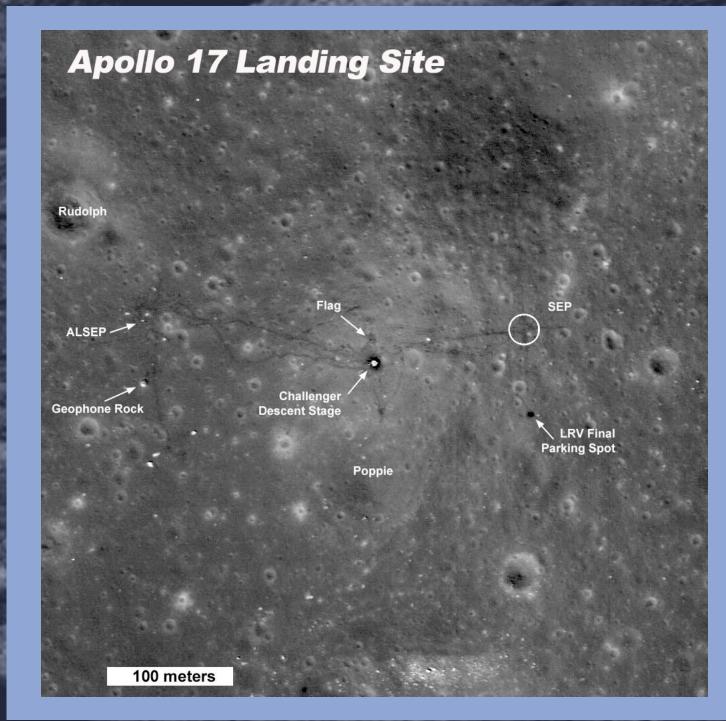
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	Lunar Data Node Experiment	Media	Apollo Mission	Status
	Solar Wind Spectrometer	Mag. Tapes	12, 15	At PDS
SP	Cold Cathode Ion Gauge	Microfilm	14, 15	At PDS
	X-Ray Spectrometer	Mag. Tapes	15, 16	Reviewed
	Soil Mechanics	Microfilm	15, 16	Reviewed
	Heat Flow Experiment	Mag. Tapes	15, 17	Digital Form
	Active Seismic (Thumper)	Mag. Tapes	14, 16, 17	Digital Form
	Dust Detector	Microfilm	14, 15	Scanned
	Charged Particle Environment	Mag. Tapes	14	In Process
	IR Radiometer	Mag. Tapes	17	In Process
	Traverse Gravimeter	Microfilm	17	In Process
	Lunar Atmos. Comp. Exper.	Mag. Tapes	17	LASER
-	Magnetometer	Mag. Tapes	12, 14, 15, 16	LASER
400	SIDE Total Ion Energy	Mag. Tapes	12, 14, 15	LASER
	Alpha Particle Spectrometer	Mag. Tapes	15, 16	Future
	Gamma Ray Spectrometer	Mag. Tapes	15, 16	Future
	Mass Spectrometer	Mag. Tapes	15, 16	Future
	Lunar Sounder	Film, Tapes	17	Future

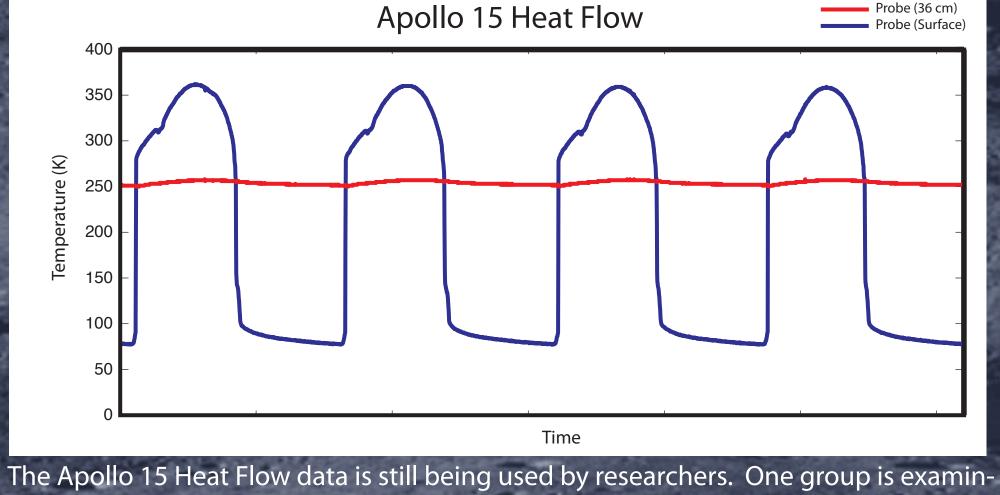




LRO high-resolution image of the Apollo 17 landing site, showing the ALSEP at the right.



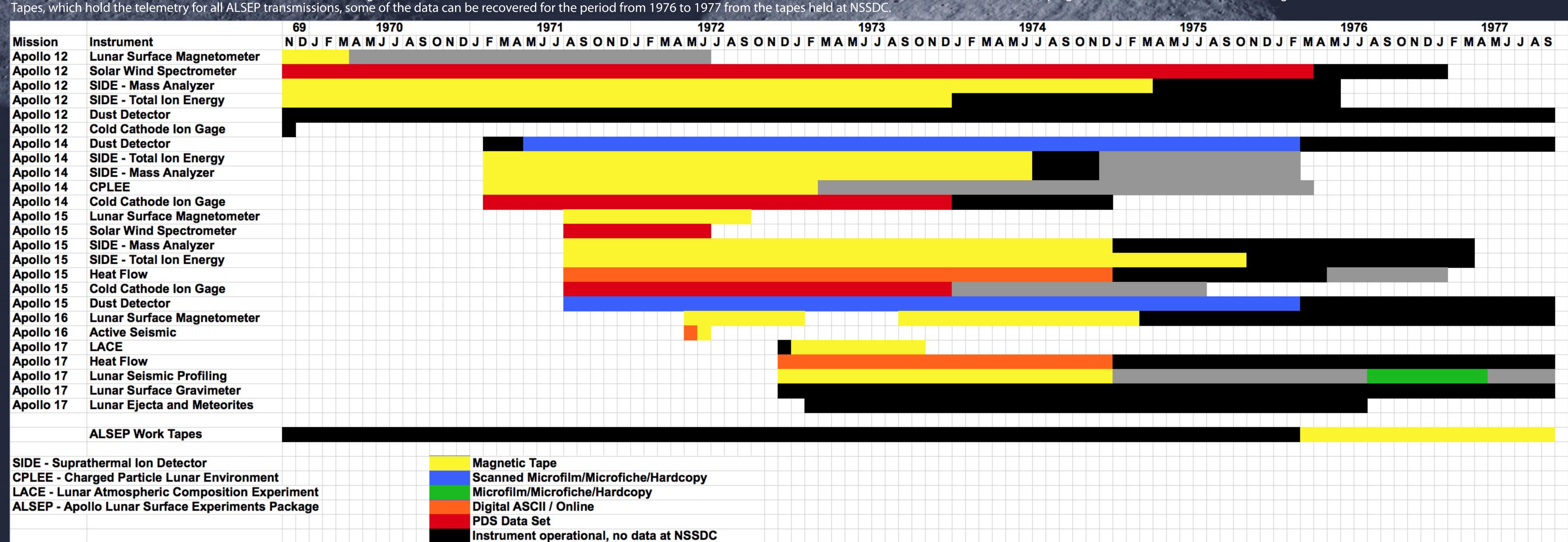
Some of the "missing" data may still be recoverable. In a separate LASER effort led by Patrick Taylor, we worked with Lamont-Doherty Earth Observatory to go through their storage area to find data and documentation from the Apollo heat flow experiment.



The Apollo 15 Heat Flow data is still being used by researchers. One group is examining the data in light of new measurements by the LRO Diviner instrument and another is studying long-term subsurface warming. These data show measurements returned by one of the probes located on the surface (blue) showing the considerable diurnal surface temperature changes, and another at 36 cm depth exhibiting the suppressed temperature excursions at depth.

ALSEP Restoration Table

ALSEP data collected from 1969 until shutoff in 1977 and the stage of restoration for each instrument are shown here. It also shows the data that were never archived at NSSDC. We are hoping to locate at least some of this "missing" data. The bottom row shows the ALSEP Work



Intermittent operation, no data at NSSDC

Instrument not operated during this period